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THE ELEMENTARY SCHOOL TEACHER

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L'ECOLE DES ROCHES

EDMOND DEMOLINS
Director

I. HISTORICAL

L'Ecole des Roches (literally, The School of the Rocks, from its nearness to a rocky cliff,) has been organized to answer the expressed wishes of a great number of heads of families little satisfied with the actual methods of education and instruction in French secondary schools. The program of the new school was set forth in November, 1898, in a volume styled *The New Education; The School of The Rocks.* The success of this volume prepared the way for the rapid success of the school. In fact, in January, 1899, the first pupils registered went to take a course of study in England or Germany, while awaiting the opening of the school. After Easter a second group of twenty pupils went to join the first. At the beginning of October of the same year L'Ecole des Roches, with fifty pupils, was opened in the House of Vallon, a building rapidly constructed. The school is situated in the domain of Roches, near Verneuil, Normandy; it is on the main road which leads from Paris to Granville, two hours from Paris. This domain, the extent of which is actually fifty acres, included at that time the Chateau of Roches, large commons, woods, prairies, and cultivated grounds.

The demands for admission being greatly increased, it was necessary to construct immediately a new house, that of the Pines. The opening of the House of the Pines took place at the beginning of October, 1900, one year after that of Vallon. At that time the

school accommodated one hundred pupils, divided between two houses, having a distinct administration. In the course of the same year, in response to still greater demands, it was necessary to open a new house, La Giuchardière; then, in the following year, two others, Le Coteau and Les Tablans.

These five houses are grouped around a special building destined for the use of classes, and where there are also the chapel and the large assembly hall of the school. There are two isolated houses designed for infirmaries, and others for the machinery, electricity, carpentry, drawing, polishing shop, chemistry, laboratory, etc.

In bringing to this institution not only their moral but financial help, the founders of L'Ecole des Roches have given a great example, in that they have shown the power of private initiative. The development of the school was made by the construction of distinct houses around the central school building, and not by the enlargement of the houses. From now on, whatever may be the number of pupils in the future, we shall always avoid the danger of congestion. Every dwelling-house possesses a large measure of autonomy, being presided over by a principal, assisted by a lady and by several other professors. There the children take their meals, sleep, and have their study classes. It is truly a home, from which the children are sent to a day school situated in the vicinity.

This type of school avoids at the same time the inconveniences of the boarding-school and those of the day school. It avoids the confinement and the strict regulations of the boarding-school, because the children live in small numbers in the home of a professor. It avoids the carelessness, the loss of time, the crossing of the tracks, and the unhealthy sojourn in the city which the day school necessitates. This kind of school will find favor in France, and will be successful by its educational virtues. Its influence was first manifested by the volume *The New Education.* After the great parliamentary inquiry upon scholastic reform, the Educational Commission directed by M. Ribot, the eminent statesman, asked for some of the modifications which are now realized in Roches. Our school has had only four years of existence, and,

thanks to the irresistible force of example, it has compelled the university to try certain improvements modeled after our program and our methods.

To remain at the head of the movement which we have so happily inaugurated, we must continually strive to improve our course of study, because this plan is our only reason for existence. One of the first improvements was found to be the study of science, not upon a theoretical presentation, as is the case everywhere in France, but upon practical work in the laboratory, begun in the lower classes and continuing throughout the school. It is only by this means that one can impart at the same time a taste for, and a serious knowledge of, science. The usefulness of this method of instruction will be understood if one considers that science has an increasing importance, not only in examinations, but in the daily life. A young man whose scientific knowledge is not only theoretical, but practical, will be the more needed and better remunerated since all our French schools produce exclusively theoretical men.

We have, besides, perfected our methods in physical culture and general hygiene, being inspired by the progress made in certain countries of Europe, especially in the schools of Sweden. This struggle must be undertaken methodically, and with all the resources of a better science of living.

II. THE GENERAL LIFE OF THE SCHOOL

Before speaking of the general life of L'Ecole des Roches, it seems desirable to give to our American readers a view of the type of the high-school teacher against whom our school protests. He lives with his family away from school; he comes only to attend the class; he takes his chair and lectures from there; and when the bell has rung that announces the end of the class, he leaves his chair and hurries to his home in the city. If the professor is a churchman, he hastens to his room. During the class-hour the professor has in front of him, at a considerable distance, an assembly of children. He has not, he cannot have, personal communication with them. The actual system creates no communication between the teacher and the pupils.

The monitors have more communication with the pupils, but generally of a disagreeable nature. These monitors are lodged at the school, it is true, but their permanent presence has for its excuse the need of continual watching. In fact, when so large a number of children are left to themselves by the absence of the teacher, it is necessary to inspire them with fear and to use punishments in order to secure obedience. The monitor is charged with this necessary but unenviable rôle. He has no serious authority over the children; he does not teach them; he has only the power to punish them.

Thus abandoned by his two educators, the pupil takes refuge in himself, and has no other resource than to turn toward his classmates. He finds an education in the invention of a thousand tricks by means of which he can outwit the vigilant monitor and rid himself of oppression. Naturally the prestige among the pupils goes to those who are more stubborn in resistance to authority; to those who are more skilful than others in running away from the guards, and in the invention of tricks. In the end authority rules and the pupils suffer. To re-establish the equilibrium of the situation, they take refuge in dissimulation and lying. This outcome is precisely the result of the scholastic régime all over France, and this is one of the reasons why the French school does not make men, because a man must never lie. Lying is not only a low vice, it is a proof that one is feeble and timid. A pedagogical system which inculcates the habit of dissimilution is condemned without any possible appeal.

In L'Ecole des Roches one meets neither such a professor nor such a monitor. Their functions exist, but in a type which is very different. Our teachers make their homes at the school, and take their meals together with the pupils in the common dining-room, where every table has ten pupils presided over by a teacher. In fact, if the professor is married, his wife has a function in the school, be it as a teacher or as domestic administrator. These teachers live from morning to evening with the pupils, not to watch them, but to educate them. They take a part in all their exercises — not only class exercises, but also games.

This long-continued contact between teachers and pupils has for its first effect the establishment between them of relations which much resemble those of a father toward his children — a father, who would take part equally in their studies, in their plays, in their everyday life. In this way is obviated the isolation of the child who has no other resource than the society of his comrades. The school, consequently, gives the impression of a real and complete life.

The character of the school is partly shaped by the presence of women teachers. It is believed that to attempt to educate a child without the presence and care of a woman is absurd. The presence of a woman is conducive to better manners. She introduces social habits into the school, and keeps the pupils away from mischief; and the young boy so educated is prepared to meet properly the feminine element in society after leaving school.

I must mention, in this connection, the moral influence of physical exercise and outdoor life. In our French scholastic system we try to lessen moral evils by moral and religious advice, whose effect is unfortunately lowered by the rigorous life to which the children are subjected, and by the supposition that they always do wrong. The best moral adviser is an active life, which creates an energetic disposition by wholesome physical fatigue during the day, and by a more profound sleep during the night. The manual training and the games, which exercise all parts of the body, the daily cold showers, and the frequent baths have a fine moral effect. By these means, and still more by appointing captains from among the oldest pupils, the teacher's task is made easier.

The school is, in fact, given to the care of the pupils; it is their task; they are responsible for its order and its cleanliness. The confidence and respect shown them develop self-respect and self-confidence. I do not think that there exist any more efficient means to build up men.

It is to reach this result that the teachers are in such continual contact with the children. For this reason also the older pupils are given some control over the younger ones, that they may influence them for good. The authority thus delegated creates a

state of mind which stimulates everyone to advance himself rapidly. Even the smallest details are so arranged as to give to even the youngest of the children the sentiment that they are men. Thus the children never have that falsely humble attitude toward their teachers which exists so commonly in our country. To tell the truth, this latter is a necessity of our ordinary system of education, because we cannot maintain an unnatural régime among hundreds of children by simply displaying the flag of authority and suppressing every desire for independence. "Your son is humble and obedient" — this is the best praise which a French teacher can give to a pupil. Our ambition is to make strong boys, independent in character, and masters of themselves — boys capable of standing the hardships of life, and even of outgrowing them.

III. THE PROGRAM OF STUDY

The fullest details of our program of study are set forth in the volume, *The New Education.* We limit ourselves to giving here some general indications: In the classical instruction, Latin and Greek occupy most of the time of the children, while they neglect other and more important studies. In spite of that, the pupils know neither Latin nor Greek. Jules Lemaitre has said: "A master of arts is a brave young man, who knows neither Latin nor Greek, and who, in turn, does not know any better the living languages, nor geography, nor the natural sciences. He is a monster, a marvel of nothing." We have adopted for the study of ancient languages the most practical and rapid methods used for the study of living languages. The pupil prepares the text by the aid of a translation, and he explains it afterward in the schoolroom without the help of a dictionary. He can, therefore, prepare by this means several pages from the text, instead of some lines only. He thus memorizes many more words and phrases, which is the most essential point. When a pupil has read and understood — which, of course, is easy with a translation book — ten or twelve volumes of Latin, he will know Latin. The rules of syntax are disclosed here and there, as they need to be applied in the explanation of texts, thus facilitating the study of grammar.

This method is more rational, more practical, and at the same time more rapid. We begin the study of Latin in the fourth year — that is to say, when the child is able to progress rapidly in a study which needs reflection. This program has an advantage which will be appreciated by all parents. The child who enters the sixth grade knows absolutely nothing about the profession he will take up, and his parents do not know his tastes and his abilities. Nevertheless, when the child is only eight or nine years old, it must be decided whether he is to take the classic or the modern course. The future of the child is at stake, as in this way certain careers are closed to him forever. This is a matter of grave responsibility for the heads of families, and to it much thought is given. For the children it is a terrible limitation. On the contrary, if these decisions are postponed until the child is in the fourth grade, the parents can decide more intelligently, because they know the tastes and the abilities of the children which have then begun to manifest themselves clearly.

The time gained from Latin leaves about twenty study hours every week up to the fifth grade; in other words, about half of the time of the pupil. This time is used for French, for modern languages, for mathematics, geology, botany, zoölogy, physics, and chemistry, which are more or less neglected in the present system of instruction, in spite of their great and incontestable importance. For the living languages we have adopted the most efficacious method: All our pupils go to spend three months, six months, or a year in England or in Germany, in our corresponding schools. These sojourns are made between the fourth and the eighth grades, thanks to the time saved from Latin during this period. In four years we have sent to England and Germany about one hundred and seventy pupils, who stayed from three months to a year. When they come back, they understand and speak English and German. The study of the languages is facilitated by use. During the meals the pupils are distributed at tables, where either English or German is spoken. It is in this way that both these languages are used at the school.

A bachelor of arts often knows absolutely nothing about geology, botany, and zoölogy; his knowledge of the most com-

mon plants is so meager as to be absurd. Of physics and chemistry he knows little. He has only the first notions, acquired in haste usually a day before the examination, during the year devoted to philosophy. He ignores nature in its different and splendid manifestations. The world is for him as if it were not. This lack is so much the more unfortunate because the children, even the youngest, take an extraordinary interest in these studies, when they are taught practically and with intelligence.

The study of natural science in L'Ecole des Roches has for its starting-point direct observation. This is easy of achievement, as the school is situated in the country and the children can gather a great number of species from the mineral, animal, and vegetable kingdoms. Besides, the life, habits, and external parts of an animal are studied before the internal organs and the skeleton; the forms and construction of the plants, before their classification; the names and appearance of the stars and planets, before the laws of their movements. The afternoon excursions furnish opportunity for observation, and for gathering plants or insects, which are afterward carefully disposed and classified by the pupils themselves. Science becomes more natural, more comprehensible, more attractive, is better retained in memory, and is better assimilated. This study does not leave the distaste that often results from our exclusive methods. It gives the desire to extend one's knowledge, even after leaving college, thanks to the very lively interest awakened by actual contact and experiment.

These studies are valuable to the children from other points of view. The out-of-door exercise, under the stimulus of an adequate motive, and the gathering together in groups, are equally important features of the science lessons. To raise children between four walls, and under a rigorous régime that would be unhealthy even for old men, is a ridiculous and absurd proceeding, against which public indignation must be roused. Therefore the program of the school accords to natural science, physics, and chemistry about five hours per week in the lower classes, without counting the hours given to the same studies in the laboratory or during the excursions. Thanks to the time taken from that usually given to the ancient languages, we could go ahead with

French, the sciences, and the spoken languages from the fourth to the seventh grade. The children who begin their studies at Roches arrive at the fourth grade in less than a year, and in these studies are ahead of the pupils of other schools. We have been aided, in our desire to strengthen the classical studies, by the sympathetic help which we have received from the most eminent representatives of the university. They have allowed us to recruit from the faculty of the university professors who are willing to co-operate with us in our attempts at pedagogic reform.

IV. PRACTICAL WORK AND SPORTS

The several studies which we have just enumerated take up the whole morning and a part of the afternoon. The second part of the afternoon, from two to four o'clock, is devoted to practical work which is the direct outcome of the theoretical work, the plays, and the physical exercise. The pupil must not learn merely from books; he has much more to study than books. The instruction must not be only theoretical, it must be at the same time practical. Moreover, the child cannot be locked up the larger part of the day; he must have fresh air and exercise for his development. The children derive, indeed, much pleasure from this work, and acquire a great variety of knowledge; their intelligence is awakened, developed, and trained; it becomes more comprehensive.

The practical work contains several divisions.

1. *Gardening.*— Every well-informed man must know at least the elementary facts concerning the life-histories of plants and domestic animals. This is necessary for him not only in the event of his being occupied later with some such rural enterprise as the supervision of work on an agricultural estate, but these accomplishments are useful even to those who take up the liberal professions. Our bachelors of arts are indeed too ignorant about the most elementary things of rural life, as we often have occasion to observe when they are compelled to write or to speak on this subject. The politician and the clergyman must also have some acquaintance with the great agricultural interests which they compromise so often on account of an inexcusable ignorance.

L'Ecole des Roches, installed in the middle of a domain of about fifty acres, contains different grounds and various plantations, and is admirably located for the purpose of teaching the children the work of gardening and cultivation.

2. *The wood- and iron-work.*— This work, of course, does not aim to make carpenters or blacksmiths, but to develop in the child ability, and a skilful hand, so that he can in every contingency, no matter on what occasion or for what purpose, make use of this marvelous instrument, the hand. It goes without saying that this is an essentially healthful exercise, which strengthens the child, because it demands a certain expenditure of physical power. Much more, the resistance that these substances oppose develops in the child the habit of patience and perseverance in the work undertaken. Finally, the wood and iron, which are the most common materials employed by the people for general uses, can be modeled to different forms, thus devloping taste and the artistic powers.

A large shed is devoted to the woodwork. The pupils have at their disposal sixteen benches. They work under the direction of a professor who is a specialist, and of a carpenter of the school. The iron-work is taught in a foundry situated in the neighborhood of the school, under the direction of an engineer of arts and manufactures, who teaches also mechanics, physics, and chemistry. Thus this instruction is at the same time theoretical and practical.

3. *Visiting of farms and factories; collection of minerals, plants, and animals; land-surveying; treating of plans; etc.*— This kind of instruction has great importance, for it puts the child in direct contact with the different industries of real life. The regions about L'Ecole des Roches is well suited for this purpose, because it is at the same time agricultural and industrial. In regard to industrial visits our region is particularly favored.

Factories are established on the majority of the streams; several in line on the open field, using hydraulic and steam-power. One can therefore make varied observations from the mechanical point of view. The observations are not less varied from the point of view of manufacturers, or output. On a single river, the Stan,

one arm of which encircles the neighboring village of Verneuil, we find the following: four sawmills, two forges, three tanyards, a brass and copper foundry, metal-plating works, two wire-drawing mills, a nail-forge, four hardware factories, two pin factories, one for the making of fine tools, a buckle factory, a sauce-pan factory, four construction workshops, several iron-polishers, five cleaning-places, two spinning-mills, a felt factory, eight fulers, a dye factory, a paper factory, a mustard factory, three elevators, and an electrical workshop. It is seen that this region contains a great variety of factories, which are so many object-lessons for the pupils.

By visiting methodically some of these workshops, the children can follow the successive transformations which the mineral, vegetable, and animal products undergo. Is there a study more necessary, more instructive, and more capable of interesting even the younger children? What they learn in this way they will never forget, and this experience reveals tastes and powers in the children which, without it, would remain poor or would be stifled. The children profit by these excursions across the fields, by collecting minerals, plants, or animals. These collections, arranged in order by each pupil, supplement in the most practical way the lessons in geology, botany, and natural science. Surveying and the execution of plans supplement similarly the lessons in arithmetic, geometry, and drawing. The principles thus carried out become a part of their lives, and help them to understand better what usefulness means.

We have organized two workshops, the polishing and modelling, in which the children take great interest. With the practical work is alternated physical exercises, especially football and the different winter sports. In summer the children play cricket and tennis, ride their bicycles, and row. The river Stan, which runs in the vicinity of the school, can be crossed without danger by small boats. The exercise of rowing, which develops the arms and the chest, supplements the exercises which develop the limbs. The small fleet of the school is just as necessary a part of the plan as it is a pleasant addition. Thus the various studies have for effect the giving of wings to all the faculties of the mind; and

the great variety of physical exercises have for their aim to develop all parts of the body. A well-thought-out plan of education must neglect neither the mind nor the body. We must sacrifice neither the body to the mind nor the mind to the body, but must establish between the two a just and fair equilibrium. The school must develop breadth of intelligence and breadth of chest at the same time.

A part of the evenings is devoted to musical and literary meetings, and to social recreation. We wish to make social men — men efficient in the world. We want to differentiate them from the sad and awkward collegian. The young men must be neither awkward nor timid, but able to adapt themselves to the society of older people without shyness and with real enjoyment. They gather often in the parlor, where they meet the ladies of the school, and strangers who come to visit us. These evenings are devoted to the reading of selected pieces, to recitations or dramatic representations, to wood-carving or modeling, to dancing, or to lectures with stereopticon views. On Sundays the pupils attend religious services, or a moral lecture. We do not present religion to the children as if it were apart from life, but like an organic and harmonious whole, which must penetrate the individual entirely and direct all his actions. The school tries to help effectively, and to continue the teachings of, the minister, to whom the children are confided for their religious instruction. There are in the school both a Catholic priest and a Protestant pastor.

V. PROGRAM

6:00 Rising, bath, dressing, prayer.
6:25 Study.
7:25 First breakfast, very substantial.
7:40 Free time; the pupils make their beds.
8:00 First class.
9:05 Second class.
10:05 Free time.
10:20 Third class.
11:20 Fourth class.
11:30 Lunch.
1:00 Free time.

2:00 Plays, football, or cricket, according to the season; laboratory; excursions in natural science; modeling, carpentry, gardening, or music, according to the classes and the days.
3:00 In the cloakroom.
4:00 Tea.
4:30 Study or class.
7:00 Dinner.
7:30 Free time.
8:00 Study.
8:45 Prayer, and bed-time.

VI. THE STAY IN FOREIGN COUNTRIES

The visits of our pupils to England and Germany are one of the greatest successes of the school. The results are indeed better than we had expected. The children make these stays from the beginning of their school-life. Thanks to these methods, they begin to speak a foreign language after three or six months. Most of the children who are now at the school have already made a stay in a foreign country. This enables them to succeed in speaking English and German. When we inaugurated these stays at the beginning of the school, we were afraid to meet resistance on the part of the parents, especially of the mothers. Today we have won the case. Sometimes it is necessary to moderate the ardor of the parents, who are disposed to prolong the stays of the children beyond the necessary time. The most of the children leave between the ages of eight and ten years. This is the most favorable age. At this age the child learns the languages best and most rapidly, and obtains this important result without any serious neglect of his other studies. We could appreciate the results obtained, if we were to read in the *New Education* the extracts which were addressed to us by parents or children.

VII. PRACTICAL INFORMATION

1. *Situation of the school.*— The school is situated in a region of level land, having an altitude of fifty meters, which gives it particularly favorable conditions from the hygienic point of view. The buildings of the school are erected in the middle of a property of fifty acres, composed of a park, prairies, cultivated grounds, and fir woods. The school has the best improvements and the best

hygienic conditions. A system of steam circulation, with a low pressure, has been adopted for heating the buildings. Electric lighting is used. The electric force is produced in an annex building, and kept in accumulators; it moves also the water-pumps and the various accessories of the washhouse. The school is in itself a real workshop of scientific demonstrations — all the more because all these installations are made by a teacher of the school, the engineer of arts and manufactures, detailed to teach mechanics, physics, and chemistry. The school is in direct communication with the different parts of France by telephone and telegraph. The station at Verneuil is a junction reached by four lines of railroad.

2. *Object of the school.*— The school has for its object to educate men as rapidly as possible, from the moral, intellectual, and physical points of view. It endeavors to develop the love for work, which is made more successful and more attractive; the sentiment of responsibility, of respect, self-control, and the habit of energy. We wish to create good-will, and sound bodies and souls. This school is a classical and modern institution, but having a new course of study adapted to the child's nature and to the necessities of instruction. This course of study permits the pupils to prepare for the bachelor's degree, for entrance into different schools, or to take up directly agriculture, colonization, industry, or commerce.

3. *The division of the school year.*— The school year is divided into three terms, each of three months. Pupils are admitted at the beginning of each term. The year has three vacations: Christmas and Easter, about three weeks each; and in August and September, two months. Weekly and monthly vacations are not allowed. This division in three periods, with the suppression of the weekly and monthly vacations, gives real advantages. On the one hand, they do not interrupt school-life very frequently; on the other, these longer stays at home separate less completely the child from his family. He remains there long enough every time to receive an influence. Thus the family-life and the school-life remain associated, the more so as this type of school is really organized on the family plan.

THE DISCIPLINE-MASTER

JOHN ADAMS
London, England

Under the word "Discipline," in Dr. Murray's *New English Dictionary on Historical Principles,* we find the ninth heading running as follows: "*attrib.* as in discipline-master, a master in a school employed not to teach, but to keep order among the pupils." The first thing that strikes one on reading this paragraph is the definite limitation of the meaning of "discipline" to what may be called its objective aspect, the power of maintaining order in a class. Every teacher is aware that the word has another meaning, the subjective, in which it has to do with the training given to the mind by the various studies of the school curriculum. We talk of certain subjects as being of greater disciplinary value than others. Under this phrase lies a theory of very doubtful cogency. But apart from all theories there remains the broad difference between the two views of the meaning of "discipline."

The objective view is by far the more popular. When we talk of a teacher as being "a good disciplinarian," we attach a very definite meaning to the phrase, and distinguish sharply between the man's powers as a teacher and his powers of keeping order and controlling a class. The distinction, though clearly recognized so soon as attention is called to it, is very apt to be overlooked in ordinary life. In fact, in one very important connection it is almost invariably neglected. Wherever the problem of the training of teachers is discussed, the remark is sure to be made sooner or later: "The teacher is born, not made." If now the meaning of the saying is worked out, it will be found that the argument proceeds on the assumption that it is impossible for any training to supply the power of control. Some possess this power, it is maintained, and some lack it, and no amount of training can

supply the want. Almost all the failures that come out of training colleges — and almost every class of students has one or two specimens — will be found to fail because of this defect. But it is worth noting that this applies only to the failures who are found out. For the experienced trainer of teachers knows full well that some of his students, who prove successful when judged by the rough and ready methods of the outside critic, are in reality very poor teachers. It is quite possible to be an excellent teacher, so far as the science and art of teaching are concerned, without being able to maintain order. For example, a student may give an admirable lesson to a class when the presence of the master of method and the other students in training, to say nothing of the official teacher of the class, renders it unnecessary to "maintain order." When such a teacher goes into the world and fails to control his class, he is said to be unable to teach; but clearly this is inaccurate. The question of his teaching has never been under discussion; he has never had the chance in school of showing whether he could teach or not; he never got the length of the teaching point. Critics of training are prepared at this stage to stop all further argument by the final statement that, since discipline is essential to the beginning of teaching, the lack of disciplinary power indicates incapacity for teaching. This argument is perfectly valid; as a practical criticism it is conclusive — unless there be found a place for the discipline-master.

Before examining the claims of the discipline-master, we must now turn to another fallacy that is so important as to justify the emphasis here laid on the distinction between teaching and maintaining discipline. Even if it be granted that without discipline there can be no teaching, it does not follow that because there is discipline there is teaching. There is a very common impression to the contrary. If a teacher is able to maintain excellent order in class, and secure instant obedience to all his orders, and is at the same time a fluent talker, it is generally believed that he is a good teacher. As a matter of fact, he has only mastered the conditions for the beginning of teaching. The power of maintaining discipline is only an essential preliminary to teaching; it is no

part of teaching itself. It makes teaching possible; it prepares the way; but it is not teaching.

Is it, then, so distinct from teaching that it can be kept entirely separate from it? Can one person teach on the discipline maintained by another? The very existence of the discipline-master supplies an answer. The thing is possible; the thing has been done. But it does not follow either that the thing has been well done, or that it is ever worth doing. The natural action and reaction between the master-mind and the pupil-mind cannot be so free and direct when a third mind is always intervening. The energies of the pupils are dissipated because they are divided. The discipline-master produces a moral reaction at the same time that the subject-teacher is producing an intellectual reaction; and as a consequence there arises in the pupil a mild form of disorder known among pathological psychologists as double personality.

The problem of the place of the discipline-master in school is complicated by a confusion that is rather widely spread even among professional teachers — the confusion between teaching and education. It is too often assumed that because a man is a teacher he is therefore necessarily an educator. But it is only to a very limited extent that education is a necessary concomitant of teaching. It is true that no one can teach anything without at the same time to some degree educating; but the same is true about any of the processes in which human beings are brought into relation with each other. The writer of penny-dreadfuls, the manipulator of *Punch* and *Judy*, the woman in the truck-shop, are all educators more or less. It is only because the teacher usually sets himself out deliberately to influence the character of his pupils that he has come to be regarded as necessarily an educator.

If he is to be a real educator, the teacher must carry on the whole work of a lesson for himself. The real teacher, however, merely as teacher, must supply his own discipline, apart altogether from the higher educational aspects of the question. While teaching can never become a by-product of discipline, discipline may well become, and in many cases does become, a by-product of teaching. The teacher who knows the nature of his pupils, who knows the content of their minds, who presents his facts in the

proper psychological order, who correlates the new facts to the facts already within the knowledge of his pupils, will certainly predispose those pupils to assume the attitude of mind that conduces to school discipline. There is a distinct gain through the unifying of all the forces at the disposal of the pupils, and the resulting teaching, merely as teaching even, is better than it would have been had it been superimposed on the discipline imposed by another will than that of the teacher.

But not only is the result better in the way of knowledge acquired by the pupil, but the effect in what is called "training" is much superior to that obtained under the joint influence of the teacher and the discipline-master. The mere imparting of facts is certainly instruction, but it is not in the best sense of the term educative instruction. Before mere teaching can arise to the level of education in the best sense of that term, there must arise that intellectual glow that accompanies the intimate interaction of mind upon mind. When this glow is present, discipline cannot be absent; it is a direct result of successful teaching. Real teaching includes discipline as the greater includes the less.

By admitting that the discipline that comes from successful teaching depends on the glow resulting from actual contact of mind with mind, it has been conceded that there is a personal quality without which discipline is impossible. A teacher may be able to express on paper in the most admirable way the course a lesson ought to follow, and yet in presence of a class may be quite unable to act according to his own directions. Accordingly, it has become fashionable to maintain that the power to maintain discipline is a natural gift that cannot be imparted to another, or indeed that cannot be greatly improved in the case of those who already possess it in some degree. Unless the teacher is born with this power, it is maintained that nothing will ever make him acquire it. So far as this statement is general, and means that none of our natural gifts can be improved as natural gifts, no objection need be raised. It may be cheerfully admitted that our inherited powers, capacities, possibilities — call them what you will — cannot be in themselves increased. It does not follow that they may not be applied with greater or less skill, and therefore with varying effect. The physiological basis of memory may be

incapable of improvement, and yet the memory may be so used in relation to the material upon which it is exercised as to produce either good or bad results. An intrinsically bad memory may be so trained as to do better practical work than an intrinsically better memory that has had either a bad training or no training at all. So with the innate power of control. It may be impossible to impart such a power, or even to increase the intrinsic value of the power already possessed, and yet it may be possible so to regulate the use of the power possessed as to produce the best results possible under the given conditions.

Everything depends upon whether the original endowment is sufficiently good to warrant the expenditure of time and effort in training it. As with the other elements of original endowment, it is extremely rare to find a case where the power of control is quite lacking. It is the business of those who have to do with the probationary stages of young teachers to discover cases of abnormal lack of the power of control, and to weed out mercilessly all such cases. But it is quite possible by practice and training to increase the efficiency with which a moderate power of control can be applied in the work of an ordinary school. Increased familiarity with the subjects to be taught, and with the circumstances under which the teaching is to be carried on, greater knowledge of the nature of the pupils and their attainments, intelligent assimilation of the practical hints of experienced teachers, the observation of schoolroom devices of various kinds, the imitation of good examples set by skilful teachers — all these are quite powerless to affect the original endowment in the power of control, but are of the utmost value in enabling the young teacher to make the very most of that power. Perhaps the best test as to whether a young teacher has a sufficient amount of the power of control to warrant spending time on its cultivation, is to discover whether he can do without a discipline-master. A teacher who requires to be buttressed up in this way is by that very fact shown to be a professional failure. There is no longer any room for the discipline-master as a permanent member of the profession. Whatever may have been the case under the monitorial and other cheap systems, he has had his day, and must now cease to be.

GARDEN WORK

ELSA MILLER
Francis W. Parker School

The garden of the Francis W. Parker School occupies a plot of ground one hundred and twenty-seven by fifty feet, some fifty feet east of the building. The area is well adapted for the purpose, being open on all sides and shaded only at the southeast corner by some tall cottonwood trees.

Fortunately for the drainage of the plot, the subsoil consists of coarse sand and gravel, which was placed there when the excavation for the school building was made. Upon this foundation a heavy layer of properly fertilized loam was placed. Each succeeding year the garden has been plowed and fertilized. This has been the cause of one difficulty. The plowing excluded from our available plants all perennials. Each year the garden was planned anew without "an old year's brand to light the new." That deprived the gardeners of many experiences which are absolutely necessary in the growth of those who are to "love the green things growing."

According to the plan followed for the first three years, every grade planted a bed of some grain or vegetable for the common use of the school. A second bed was assigned to each grade, to be divided into individual plots. It is evident that under this plan the garden presented a motly appearance, since every child planted in his bed whatever he chose, irrespective of what was in his neighbor's bed. Sometimes several kinds of vegetables and flowers were planted in a bed two by three feet. Tall plants shaded and interfered with the growth of low ones; vines overran and crowded out other crops. The effect of the whole was not beautiful. The crop was limited in quantity and poor in quality. The care of the garden grew into a burden rather than a pleasant task. What is more important, the great opportunities

which garden work offers toward unifying the school and enriching the social life were not realized.

After three years of such experience the children were ready to combine and organize their efforts, and last year, with the help of the teachers, a new plan was made, the teachers keeping in mind that the garden should be beautiful; that each child should be allowed to choose what he would plant; that he should have a feeling of ownership about his garden bed and the crop he would harvest; that all plants should be placed in the environment best suited to them; and that every part of every bed should be easily accessible to the smallest child.

First, every member of the school wrote a paper indicating in order of preference his choice of vegetables and flowers to be planted in the garden. The accompanying lists include all plants mentioned:

VEGETABLES

Lettuce	Spinach	Beets
Radishes	Parsley	Peanuts
Onions	Corn	Cotton
Potatoes	Popcorn	Watermelon
Tomatoes	Beans	Pumpkin
Cabbage	Peas	Cucumbers
Turnips	Watercress	Muskmelons
Carrots	Celery	

FLOWERS

Pansies	Bleeding Heart	Daisies
Sweet Peas	Forget-me-nots	Lilies of the Valley
Cosmos	Moss Roses	Morning-glory
Asters	Roses	Nasturtiums
Bachelor Buttons	Geraniums	Lady Slipper
Sweet Alyssum	Sweet Williams	Candytuft
Violets	Heliotrope	Coreopsis
Mignonette	Hollyhocks	Easter Lilies

To this list were added names which the teachers suggested of plants which would be of service in the science, industrial and art work of the school and which would add new acquaintances to the children's flower friends:

VEGETABLES

Wheat	Sage	Pepper
Sugarbeets	Bohnenkraut	Plum Tomatoes
Flax	Lavender	Asparagus
Kohlrabi	Kale	Gourds
Dill		

FLOWERS

Nicotine	Salvia	Sunflowers
Caladium	Ornamental Pepper	Celosias
Four o'clocks	Marigolds	Canterbury Bells
Ageratum	Amaranthus	Cypress Vine
Stock	Scarlet Runner	Zinias
Wallflower		

Committees were formed, composed in each case of children who had chosen the same plants. The first two choices of every child were adopted. If, as in several cases, these committees were too small, the third, fourth, or sometimes fifth choice of a child was considered and sometimes volunteers were called for.

After these groups had been formed, a detailed outline of the work necessary to make the garden a success was as follows:

a) Making of the general plan.

b) Drawing of a plan for each teacher, indicating the parts of the garden for which her pupils were responsible.

c) Writing lists of names of children to act on various committees, these lists to be posted in the hallway.

d) Making individual seed envelopes.

e) Labeling same with name of seed, name of child, and grade.

f) Apportioning seed.

g) Writing and attaching to each envelope clear and concise directions for sowing the seed.

h) Surveying the garden.

i) Digging out of the paths (marking beds with string has not been satisfactory).

j) Making garden stakes and labeling same to correspond with envelopes.

k) Making large stakes with small sign boards attached, to aid in readily finding the beds.

l) Placing of stakes in garden.

m) Making of a hotbed.

This list was presented to the school and the various kinds of work were either chosen by or assigned to the grades where they were best adapted. For instance, the plans were drawn by the

seventh grade, envelopes made by the third grade, and directions for planting formulated by the fifth grade.

The making of the plan was the most responsible piece of work. It required consideration of many phases, most important among which were beauty, proper shapes of beds for convenience in planting, relative sizes of beds and their positions as to best conditions of light and moisture, and numbers of children acting on the various committees. For example, the favorite vegetable was lettuce. The amount of lettuce seed likely to be used was calculated, and this, with the size of the committee, was considered in determining the dimensions of the lettuce bed. In some cases an entire bed was assigned to one class, for the special study of some crop necessary to the work in that particular grade. For instance, the sixth grade took charge of sugar beets, the fourth grade of flax, the fifth grade of wheat, and the first grade of popcorn.

The work mentioned under *b* was important. The illustration given below shows how from these plans every teacher knew what was to be planted in every nook, and by the colored spots knew at a glance where she might expect to see some of her pupils working. The names of the children did not appear on the plans, because the teacher in charge had a plan which included the names, and directed the placing, of the individual stakes. The beds were marked off by means of a board, the edge of which was pressed into the ground. The depression made was filled with sand, which stayed in place long enough to serve the purpose.

The flower garden was more difficult to plant, because the rows overlapped, and the general arrangement was more complicated. Here the beginning and end of every row was indicated by a stake, the two stakes being labeled alike and facing one another.

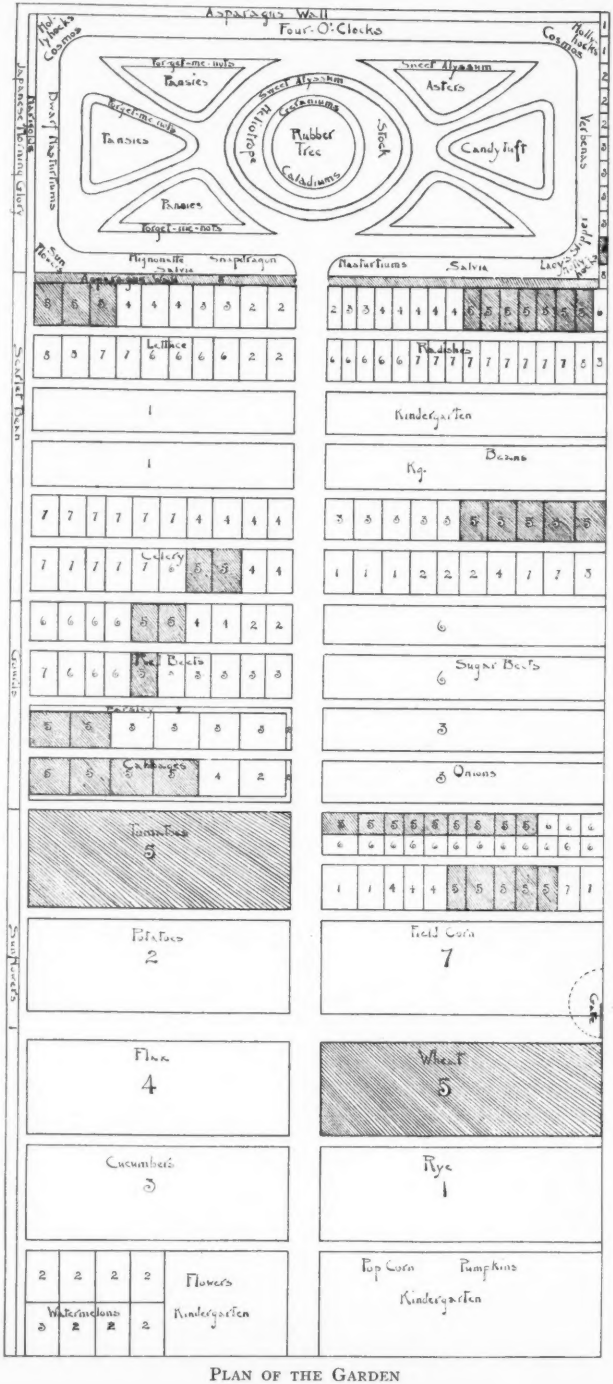
With this plan every child had all the information necessary to make him independent in locating his bed and doing his work. All stakes were marked with paint or ink to make them proof against the rain. A red chalk mark was the means by which the children indicated that a bed had been planted.

Formulating directions for planting was an interesting piece of work. The motive of making all the directions so simple and clear that they might be read and understood by a child in the first grade made a demand for good concise English which the fifth-grade child could thoroughly appreciate. Directions poorly stated might mean failure, disappointment, and a mar to beauty.

The interest shown in making the hotbed is worthy of mention. The science work on decomposition, generation of heat, plant food, and germination was done with zest. The hotbed was so generous in its productiveness that there was a good supply of plants to give to all children who wished to start home gardens. Many children made small gardens along the edges outside of the big garden. All summer good reports came of tomato and cabbage crops, fine specimens of flowers, etc.

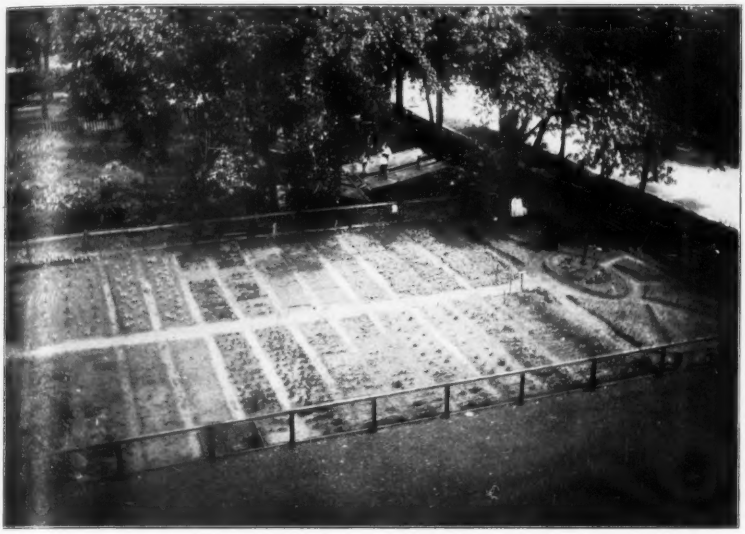
After the planting was accomplished a careful record was kept in writing and painting of the date of planting and the date of germination and appearance of plants in the first stages of growth, and the changes from week to week. This record was made in order to enable us another year to distinguish the young plants from the young weeds. Many mistakes in weeding were made this year. In some cases the children were temporarily discouraged because they expected the plants to appear too soon. One little girl who planted ageratum waited five weeks to see signs of growth. Just as school closed she found a few minute leaves. Four weeks later the plants were one foot high. This fall she supplied every classroom with blossoms for several weeks. Another year the data recorded will prevent this discouragement.

The school garden was a great benefit to the work in the art department, as it furnished abundant material and afforded the opportunity for continual use of flowers and vegetables in the study of elementary composition. The following are a few illustrations selected from the work of the sixth and seventh grades, as their work was done in black and white, and therefore is more easily reproduced than the color work of the other grades. The problem thus illustrated was to consider spaces in the background, masses of flowers and leaves, angles of stems, and their relations to each other.



PLAN OF THE GARDEN

GARDEN FLOWERS USED IN ART WORK, SIXTH AND SEVENTH GRADES



BIRD'S-EYE VIEW OF GARDEN

FIRST GRADE HARVESTING THE POPCORN

THE SCHOOL GARDEN IN OCTOBER

Some of the sources of special pleasure to the children were: the asparagus hedge planted to separate the vegetable garden from the flower garden, this hedge having been planted in May and started from three-year-old roots; the bright red and yellow celosias, some of which grew four feet tall and waved plume-like on either edge of the long center path of the vegetable garden; the muskmelons, which grew so thick and luscious that from a bed of twenty-four by nine feet were harvested over forty melons; the watermelons, pumpkins, gourds, and green peppers; the celery bed, which supplied the school for seven weeks; the caladiums, which grew from bulbs two inches in diameter to plants five feet tall, with leaves two and one-half feet long. Last, but not least, the garden gate, and the benches which the small boys made from an old tree trunk which they chopped down, should surely be mentioned, for they would appear in any child's list of the special attractions of the garden.

One grade took complete charge of the grounds in front of the building. There they planted all favorite flowers, making every effort to have a variety great enough to insure blossoming plants throughout the seasons. Some children made frequent visits to the garden during the summer. They weeded and watered at those times, but coming irregularly could not give the garden proper care. The watering and weeding during the vacation time was kindly done by the man left in charge of the building, and by other interested people. Some children expressed a commercial instinct by selling vegetables to their parents and to other children. They agreed to put the income into a common bank, the money to be used in buying some of the seeds for next year's garden. The treasury was also increased by funds coming from a neighboring grocer, who bought at regular market prices what produce was not given away.

In August Canterbury bells, Sweet William, and hollyhocks were planted. The young plants have a good start, and there are enough hollyhocks to plant along the entire front of the building.

This fall the flower garden was cleaned and spaded. A large number of bulbs were planted and by this means the children may enjoy the garden for many weeks before June, while other years

they have had few blossoms before the close of school. At present many children are nursing geranium cuttings and old stocks planted in window boxes. The pepper plants are adorning several classrooms. All are waiting for the spring when we shall make a much larger hotbed and supply the home gardens and perhaps some children in other schools.

Aside from the definite knowledge gained and its all-around educative value, if the work in our school garden adds a few names to the list of those who will always love and make gardens, it would seem that it has been well worth the time and labor expended upon it.

RAPIDITY IN ARITHMETIC

G. W. MYERS
The University of Chicago, The School ef Education

In the *Elementary School Teacher* for January 1905 the nature and office of accuracy in arithmetic were discussed. An attempt was there made to draw a line of distinction between arithmetical "cutting to pattern," or "target practice," and accuracy. It was there shown that the current reason assigned by grade teachers and principals that the boys and girls are more interested in arithmetic than in many other subjects in the seventh and eighth grades is that arithmetic problems are capable of more definite comprehension and answer, while the difficulties of other subjects are more vague with answers not so much of the pure "yes," or "no-variety," is in most cases an argument directly opposed to the high educational value of arithmetic, since it reduces arithmetic work to the "target practice" and "score-card" variety. It makes accuracy synonymous with mere *mechanical accuracy.*

In this paper the function of rapidity and the limitations under which it should be striven for in teaching arithmetic will be considered.

The practical man of affairs who supports, judges, and criticizes school work has an eye single to results alone, giving little or no heed to methods by which the results are reached. The teacher has his eye on results, but his chief concern is for methods that are economically and educationally sound. The maxims "Secure results without too great waste of the time and spirit of the learner," and "So teach that the act of acquiring is of more value than the thing acquired" to the teacher assume the dignity of great practical truths that cannot be disregarded with impunity. To the layman they are mere half-truths at least not to be taken too seriously, in case those mechanical results upon which the

commercial and industrial world have put a high rating are not sufficiently numerous and manifest. The true teacher finds it wholesome now and then to disentangle himself from the glamour of the mart, and to seek the benefits of solitude to reassure himself of his educational moorings. Teachers need to practice this prudence often with regard to the meaning of the current arithmetical catch-phrase "speed and accuracy." It is the first part of the phrase that concerns us here.

It may conduce to clearness to state at the outset that a fundamental axiom of this discussion is that the purpose of every teaching act shall find sufficient justification in *the present needs of the taught*. "Hope deferred maketh the heart sick" is a more dangerous measure in the arithmetic class than in adult life. Not that no teaching act can be tolerated that does not justify itself fully *to the learner* at the time he is learning; for the place and meaning of much teaching have not yet been fully thought out. The science of teaching is still young. It has been and still is necessary to spend much time and energy justifying its claims to a place in professional curricula. The pre-emptors of the educational ground are so easily skeptical of everything new, that much time has gone to waste from the repetition and multiplication of argument for the sake of ancient and intrenched opinion that could be reached only with *a priori* reasons. The lethargy of our long pedagogical night is not yet entirely thrown off. But few of the *practical* problems of teaching are solved. The purport of our axiom is that no teaching act is more than tentatively justified until it can be freely admitted through the door of the learner's present needs.

Nor can the automatic promptness with which experienced teachers recite that one of the chief aims of arithmetic teaching is speed be taken as proof positive that the question of the educational office of speed has been solved even in individual cases. We must confess to the presence of much canting action as well as canting speech among teachers. The phrase "accuracy and rapidity" has been so long "canted" about that its possibility of estopping thought and disarming argument is the strongest reason for reviewing its legitimate bearing in arithmetic. Divesting our-

selves of all notions of the sanctity of the phrase let us endeavor to find what of real educational merit there is in it.

Let one enter a grade room in the midst of the arithmetic period in almost any good elementary school and here is what he will at once see. A few pupils — perhaps one-third of the class — alert and attentive, another third will be loafing—"doing time"— and another third will be loafing because it is held in check by the half-hearted workers and slow, but hard, workers. The teacher is never-failing in insisting that everybody "hurry up." The text-book in a scarecrow note says: "A boy could not hold his job in a bank 24 hours who cannot foot that column correctly in 2 minutes." The teacher believing he is doing God's service, uses this as a spur on his class. The little ones, not comprehending the meaning or nature of the goad, though each imagining he is some day to try to hold a job in a bank, comprehend enough to understand that the teacher intends it as a whip, so they look a trifle worried, frown a little, and fidget a little, then as the reasons for the processes involved are hopelessly beyond them, each settles rapidly into his former place in the uneven ranks. Return a month later and behold the first and last thirds have shrunken to a scant fourth of the class, the one now hopelessly and helplessly behind, and the other far ahead of the average, and the second-mentioned third has swollen to a liberal half of the class.

This is not an overdrawn picture of what one may see in almost any good elementary school in the arithmetic classes. The teacher, after piling on enough formal work to nauseate an adult and keeping up the piling-process for from half to three-quarters of an hour, will tell you at the close of the period that he regards speed and accuracy as the primal considerations in arithmetic teaching. You would say, if you dared, that the tactics being pursued could not by any possibility secure either. You can only think that nervousness and feverishness on the one hand, and lounging and loafing on the other, all of which are the legitimate progeny of the aforesaid tactics, are the born foes of mental concentration, which is the *sine qua non* of speed and accuracy. The *modus operandi* you have witnessed can only dissipate any native incipient tendencies toward concentration. It inhibits and pro-

hibits consecutive thought by dispeling all the relevant materials of thought, and substituting for them a mass of irrelevant ideas. One easily concludes that to be accurate about nothing in particular is as impossible as it is to be speedily correct in matters one cannot comprehend. Still some of those who are most insistent upon accuracy and rapidity urge that children cannot do thought-work in arithmetic. They would have us believe, in spite of the evidences of our plain senses, that real problems that have to be thought out serve only to confuse and muddle children. The most fortunate thing about this view is that it is altogether untrue to the facts in the case. If it were true it would be a clear case of the conditions of arithmetical education defeating education itself.

A little attention to the spontaneous activities of children, if parents and teachers were only wise enough and courageous enough to allow this spontaneity to remain unspoiled by the injection of self, long enough for a little study of it, will readily convince any one that each pupil, just as each adult, has a certain *norm* of speed at which he can dispatch work most economically and, at the same time, maintain a uniformly high grade of excellence of output. Each child has a normal mental, as well as a normal physical, gait, and at this gait he can secure most steady and certain concentration of thought. To undertake by extrinsic stimuli to force a pupil to work above his norm of speed is to make his mental acts flighty, uncertain, and jerky. To allow him to work below this norm is to permit his thinking to become "wobbly," ambling, and wandering and to encourage him to loaf, to accustom him to going at his tasks in a half-hearted way. This mulling over his work is again both the cause and the effect of permitting the pupil to work below his norm of speed and the end of it all is a loss of the power to concentrate.

It is the manifest duty of the teacher to seek by an individual study of his pupils to ascertain the *norm* of speed for each pupil and to hold him up to it religiously, but by no means to drag him beyond it. The pupil must and will raise his norm only *by working within it and close up to it, but not beyond it.* It is impossible to keep up work of this sort for long. If tasks of this nature are too long sustained they will defeat their own purpose.

Evidently, then, drill-work for speed and accuracy must be brief, brisk, and, what is very important but often ignored by the teacher, it must be thoroughly comprehensible to the pupil. It is evident, also, that the amount, kind, and continuance of it must vary with the individual pupil. To the teacher drill-work, if sane and thoughtful, furnishes a means of studying the individual habits and aptitudes of pupils. To the pupil drill-work, if properly administered, is a training in concentration of thought. The loose, flabby, and purposeless "quick-work," quite commonly seen in the public schools, is not drill-work, for the reason that there is not in it enough concentration of thought to constitute it work at all.

A HISTORY OF THE TEACHING OF NATURE IN THE ELEMENTARY AND SECONDARY SCHOOLS OF THE UNITED STATES. I

I. B MYERS
The University of Chicago, The School of Education

The following historical sketch on nature-teaching in the elementary and secondary schools of the United States includes the subjects variously known as natural history, nature-study, and biology (botany and zoölogy). The object of the study is to try to determine in a general way the aim and method of nature-teaching, and note the influence of the study upon educational purpose and practice.

The choice of subject and method of teaching, of any study, is largely determined by our conception as to the general aim or purpose of the study. In order to understand the full aim or purpose of a study, at the time of its introduction into the school curriculum, and to follow its development and influence from the period of its introduction to the present time, it is necessary to keep in mind the growth of those general ideas which shape the educational purpose as a whole. The complete educational purpose is most clearly revealed, because of its simplicity and directness, among primitive peoples. It consists of learning to perform acts necessary to living: to hunt, fish, prepare and use weapons and snares, prepare skins for clothing, construct shelter; and to do these things in such a way as to avoid offending the spirits which presided over the various objects of man's attentions.[1] The history of primitive races is largely the story of this twofold relation of man to the universe about him. The advance of man is marked by a gradual discovery and understanding of nature's secrets, and each discovery carries with it a gain in the feeling of mastery, and a loss of intensity in that quality of the emotions

[1] Monroe, *Textbook of History of Education.*

which go hand in hand with mystery. Out of these conditions of living arise three, interlocked, groups of relations, varying in the dominance of their influence over man, but common in some degree to all men of all times: (1) that group of relations which has to do with supplying man's physical needs and comforts — the immediate securing of food, clothing, shelter, or their equivalent in wages; this represents education from a utility standpoint; (2) that group of relations which has to do with intellectual conceptions, æsthetics, and religions; (3) that group of relations which has to do with man's relation to man — social rights and needs.

Each of these groups has been recognized as having some place in the general educational scheme; the tendency being for one or the other to lead or dominate, according to the conception of the ultimate educational purpose. The general habits and environments of the people have had much to do in molding this conception as to the function of school work and the type of subjects to be studied. In a consideration of the study of nature it may be of importance to note this general change in nature environment: At the beginning of the century 4 per cent. of the people of the United States lived in cities, while 96 per cent. lived in rural districts, and were occupied, to a large extent, in some form of work dominated by the nature environment, and in which their living problems were directly related to this same environment. At the end of the century 48 per cent. live in cities, engaged in occupations dominated by social conditions and influences. During this early period children were in daily contact with their natural environment, and their acquaintance with the earth surface, climate, soil, animals, and plants, and the relation of these things to man, was gained at first hand. The people of the period were, on the whole, too fully occupied in supplying their immediate needs and simple comforts, and in subduing the earth to afford to experiment or theorize. They looked upon life from a "practical standpoint." It was only at a later period, when living became less strenuous, that the general-culture idea gained headway.

The study of nature was introduced into the schools of the United States near the beginning of the nineteenth century, but gained little headway during the first quarter of the century. The people of this period were quick to detect the instinctive interests of children in nature; they were aware of their insatiable curiosity, and the ease and pleasure with which they gained an acquaintance with natural objects and phenomena. But the conditions of living gave children a full acquaintance with these things, as to their uses and relations to man, and this knowledge could be better gained at home than in school. In their theoretic conception of nature the dominant idea was that of special creation, and these products of nature were for man's use and comfort. In this conception they found their motive for teaching nature to children. They argued that, by taking advantage of the early interests and pleasures which the child took in nature, he would be led to a fuller appreciation of the wonders of creation, and could thus more fully and reverently "love and admire a Being who could and did create such wonderful things for the children of men." All sciences were taught with this end in view, but none, unless it be astronomy, were calculated to accomplish this purpose so effectively as natural history (biology). Many of the natural-history lessons were in the form of reading stories, and were frequently queer mixtures of science, moral training, and religion. The following, from Lovell's *Young People's Second Book* (1836), is a type:

THE HEN

Of all the feathered animals, there is none more useful than the common hen. Her eggs supply us with food during her life, and her flesh affords us delicate meat after her death. What a motherly care does she take of her young! How closely and tenderly does she watch over them, and cover them with her wings; and how bravely does she defend them from every enemy, from which she herself would fly away in terror, if she had not them to protect. While this sight reminds you of the wisdom and goodness of her Creator, let it also remind you of the care which your own mother took of you, during your helpless years, and of the gratitude and duty which you owe to her for all her kindness.

Nature thus stood as a source from which could be drawn great moral and religious truths; and recognizing, as the people

of this period did, the period of childhood as the time to impress the race with these truths, it was a logical sequence that the introduction of biology in "female seminaries" should find early favor. These students as mothers would hold the early influences upon children in their power, and with a knowledge of nature and the great lessons to be drawn from her, they would be the better prepared to guide children in the early years of their childhood. They argued that

> The study of nature is a source of instruction and enjoyment from which no mind should be excluded, and least of all the minds which usually may give direction to the propensities of early childhood, and which ought to be supplied with means for attaining a pleasing ascendency over the dawn of character.

Popular sentiment seemed to consider the study of nature good, because of its pleasing and stimulating influence, for children not fully immersed in school work, but did not look upon it as a part of serious school study.

> The study is regarded as an accomplishment, like the study of the fine arts, too inapplicable to the plainer and sterner duties of ordinary study. The system of utility and selfish views of immediate practical good come into action.

In the introduction of biology in the girl schools or academies, the work was confined wholly to the study of botany, by reason of its being

> by far the most attractive, elegant, and precise, so well adapted to the refinement of female education; and the subject of its study so universally admired.

The general attitude of the educational public toward this study, as to its purpose, is best summarized by the various discussions of the period:

> Botany is one of the most delightful and healthy amusements; but the entertainment afforded by this study does not arise from merely knowing the scientific name of plants, but in finding them out for ourselves.
>
> Botany is peculiarly fitted for introduction in a girls' school; it is admirably adapted to the tastes, feelings, and capacities of females, as is demonstrated by the fact that the majority of botanists are females. Boys are less easily interested in it, more apt to be careless and harsh in their treatment of specimens, and too much attached to rude and boisterous sports.
>
> Botany should be considered as a science of amusement; but with this strong recommendation, that it be acquired without stealing a single hour from more important studies.

The study of natural history is particularly desirable for children and young people, because it not only supplies them with an inexhaustible source of innocent amusement, but it is also extremely improving (if scientifically taught) by accustoming them to generalize their ideas and showing them how every subject may be simplified by regular and judicial classification. Children are generally delighted with everything that possesses life; they should therefore begin with *animal life* as being more interesting. Children may amuse themselves by classifying shells which, though of no use, will at least lead them to observe and admire the productions of nature.

These statements represent fairly well the general attitude toward natural history during the first half of the century.

Turning from theory to the actual teaching of natural history, we find that public and common schools excluded it entirely from their curricula. This was not so much on account of its inutility as from a lack of proper facilities for carrying it on. Teachers were thoroughly dependent upon textbooks in their teaching, and there were no textbooks to assist them in the most rudimentary work of natural history. The few books that existed, especially on animal life, were defective in that they were untruthful, fanciful, and were translations of foreign books treating of objects foreign to the pupil's environment, and did not serve to give him any introduction to nature around him. To add to the difficulty, teachers looked upon the text of these books as something to be memorized by the student. In botany the whole study centered around the Linnæan system of plant analysis and classification. This rendered the subject too difficult for study except in academies.

From too great a want of elementary textbooks and a greater want of proper instructors, the entrance to the delightful domain of natural history is rendered disagreeable. The student is disgusted with its technicalities before his zeal is awakened to its curious facts. He attempts to study its theory, and its theory is considered the end and aim of pursuit. . . . . Take, for instance, the single branch of botany . . . . as pursued in our schools it is generally a task. The students commit to memory page after page of some textbook so as to be able to tell the correct term of each organ of a plant without a single idea as to its economy. A specimen is put into their hands, and after being able to count the number of stamens, to determine without much hesitancy the size and form of the leaves, and by much trouble to discover through the manual the name — the mighty work is done. Pupils are now wise as the instructor; their labors and investigations must cease (1837).

There seems to have been little or no change, in either attitude or practice, in the work during the first half of the century. Apostles were abroad pleading for better things, but owing to the general lack of books and facilities for leading the way, and those available leading in a contrary direction, changes came slowly. Commenting on the study of botany, Gould (1834) says:

> The whole science of botany becomes little else than the counting of stamens and pistils; and if a student can tell whether a plant belongs to Pentandra or Didynamia, names to which he attaches no meaning, it is the height of his aspiration. . . . . It is of no consequence whether it is good for the food of man or beast, whether it is sanatory or poisonous, whether it may be cultivated on dry or wet soil. The kind of knowledge gained is neither practicable nor comprehensible.

The description of animals and plants as given in geography texts was, on the whole, considered ample for elementary schools. The idea of investigation did not exist in the schools; the only idea that existed was that of learning, and learning consisted of memorizing the text of a book. The attitude of the student counted but little; the rod and prizes were there to stimulate him into activity. The study, in the academies, was for discipline, and discipline consisted in working out some intricate system laid down in a textbook. The period was characterized by the natural-history phase of nature-study, and by a study of botany according to the Linnæan system of classification, both according to the textbook method. The aim in elementary work was to lead children "through nature up to nature's god," and to afford them innocent and pleasurable amusement, thus drawing them away from "frivolous and dissipating amusements."

In the academies the aim passed variously from a type of information essential in the care of children, to pleasure and refinement, until it got sufficiently severe and exact for discipline. In contrast to the work in the schools, we find a general unrest and protest against the character of the work going on in the schools; both Gray and Agassiz, the recognized leaders in their subject at that time, raised their voices in protest. Gray, in 1841, says:

> I do not suppose that the mere treasuring up of facts will effect the object of education . . . . I venture the assertion that, if the truth were known, the

child acquires a greater number of useful ideas, more real development and strength of mind, during his play hours with his rabbits, his kites, or from his story-books, than he does from the lessons assigned him during his hours of study; he is really educated more out of school than in school.

There is a general plea for a return to a freer study of out-of-door nature for the sake of a broader, healthier, and more pleasurable experience. The new theoretic attitude is well summed up in the following words:

The student should first examine, in all directions, the neighborhood of his residence, and should make himself so thoroughly acquainted with it that he can call up before his mind whatever he chooses. Such an acquaintance is the result of the unconscious and fresh pleasures which youth, joyful and free from scientific anxiety, will find for itself in such an examination, obtaining in this artless way a simple general impression not forced by a teacher. He is not teased while he is rejoicing in the blue heavens and the rapid motion of the clouds, in the oak wood and flowery meadows, where the butterflies play, by a professor with a kyanometer to measure the blue sky, nor by recommendations not to stare in the woods, but rather to ascertain whether the oaks are *Quercus rubus* or *pedunculata;* or, not to look at the flowers all at once, as if they were a yellow carpet, but to take his Linnæus and determine the species of this *Ranunculus;* no entomologist is setting him to chase butterflies and impale them. . . . . In this paradisaic pleasure is planted the seed of the perception of an intellectual world whose secrets will not be fully ascertained even after the longest and most active life of scientific effort. But most teachers, by the dispersion of these simple impressions of nature, destroy these earliest pleasures of children, the brightness of the imaginary which they see, or by our failure to bring them in contact with nature they fail the experience entirely.

The general tone prophesies a change for better things.

[*To be continued*]

EDITORIAL NOTES

'Tis time,
New hopes should animate the world, new light
Should dawn from new revealings.

— *Browning.*

New Principle in School Management

For the first time, *ab urbe condita,* the citizens of Chicago have had an idea set before them by one of the members of their Board of Education which embodies a new principle in school management and administration. The unique feature of this idea is found in the proposal to change from the primitive autocratic village educational system which now prevails the country over, in hamlet and metropolis alike, to a modern form more consistent with democratic ideals. The distinctive features of the plan proposed are given in the following statements, quoted, in substance, from the daily press:

1. Redivision of the city into districts each containing from ten to twenty schools.

2. Organization of all the principals and teachers in each district.

3. These organized bodies to act in a supervising capacity in the direction of the educational affairs of the district.

4. Nomination of principals by the district organization of principals and teachers; the superintendent to have the power to veto, and the Board of Education the power to elect.

5. Abolition of the Board of District Superintendents.

6. Substitution, for the present board of six district superintendents, of twelve teachers holding principals' certificates, to be selected by the organized principals and teachers of each district; these teachers to serve as critics.

7. Abolition of the promotional examination feature of the Normal School extension work, and the substitution of a differently organized merit system.

As a study of human nature, it is interesting to observe how

these proposals were received by many members of the Board of Education and, editorially, by the public press. There was a great howl; nothing more intelligent, nothing more indicative of calm inquiry or of a disposition toward careful consideration — just a nine days' howl, for which, of course, the board as a whole must not be held responsible since the propositions were not placed officially before it.

Human Nature on Exhibition

The people generally express themselves as being anxious to have a "hard-headed business" administration of their schools. In this case, however, it is worth noting that the reaction of those who succeeded in getting themselves into print stands in strong contrast with the best modern business methods. There is a firm in this city, for example, the largest of its kind in the world, that has achieved its success after a different fashion. This firm pays a cash bonus for any suggestion which an employee can make that can be adopted with advantage to the business. There is a manufacturing concern in southern Ohio that in twenty years has made itself a world-monopoly. Throughout its factories many recording devices are distributed which the employees are invited to use as a means of bringing suggestions to the notice of the firm. Last year out of some fifteen thousand suggestions a majority were carried into effect by the board of administration. The plans adopted by these two firms reflect a far-sighted business policy that does more than anything else to insure in the employees a growing interest and a steadfast loyalty. That is to say, the best type of business man today has learned to quit howling at criticism, and, also, that it pays to leave no stone unturned to secure the intelligent moral support of all his workers.

Hard-Headed Business Methods

But with your "hard-headed business" board of education it is different. No other organization on earth is so skittish toward suggestions from the outside. Here is a peculiar phenomenon that is entirely beyond comprehension. Many a man in private life is most unobtrusive and unassuming; willing to get light from any source; modest and diffident in speaking on educational questions. But elect this selfsame man to a board of education and, in most

An Inexplicable Phenomenon

cases, within a month an angel from heaven would be unable to teach him anything — would be afraid even to try! Or, in private, he may be a sonorous defender of personal freedom; but once on the board, if he does not immediately begin to round up the teachers and to treat them like a herd, he is the shining exception. It has come to pass in most communities, therefore, that if a teacher were to make a suggestion to a school board, he would attract to himself unfavorable notice, if not suspicion; if he were to persist in such policy, he would be snubbed and probably "transferred" as a warning of even more serious things in store.

Degeneration of Teachers

Therefore, the thousands of intelligent men and women teachers throughout the country who are in the best position to know what the schools need have their lips hermetically sealed. And, still worse, their minds gradually close up and cease to work upon educational problems in their broad aspects, and they develop, or rather degenerate, into sycophants, cowards, and "stupids." The attitude of the ordinary school board toward its teachers, touching questions relating to the welfare of the schools, will, in time, turn all except the most stalwart into intellectual and moral runts. Such a policy is "hard-headed" enough; but, as a type of business method, it belongs among the trilobites in the fossil-bearing strata of the Lower Silurian.

In Chicago matters have gone farther. A member of the board was recently criticised in one of the meetings for making use of a communication which he had received from one of the principals. It was held to be in some way a violation of official courtesy due his colleagues. And it now turns out that if one of its own members, even, dares to work out a plan which he thinks might improve the school system, he does so at his own risk — that is, at the certain risk of being met with a howl!

A Well-Qualified Board Member

In the present instance Dr. DeBey, the author of the plan outlined above, is peculiarly well qualified to work with intelligence upon school problems. She is a trained teacher, and one of the very few members the board has ever had (I now recall but one other) who have filled and who still could fill acceptably positions in the elementary, high, and normal schools. Her actual schoolroom experience,

coupled with her lifelong studies in education, if paralleled in some business enterprise, would entitle her ideas to close attention and respect. But the ordinary "hard-headed" business man, when he gets on the school board, has another and a time-honored way of dealing with anything resembling a new idea. He proceeds to show by vituperative methods how utterly impossible it is. It never occurs to those of his type that, if they were to devote as much energy to finding out the good points of a new idea as they do to proving that it is absurd; that, if they really were as anxious to understand a new plan when it is presented as they are to stamp it out; that, if they were as earnest in their effort to devise ways for carrying it into effect as they are to show that it is not practical; that, if they were to assume a position of friendliness and tolerance toward new ideas instead of an attitude of chronic hostility; that, if their influence, which now stands as a bulwark of eternal negation, were to be transformed into a positive force — it never occurs to them that then we should advance educationally as much in five years as we now do in fifty. No enterprise on earth ever grew up under the policy of the habitual objector; to adopt his methods in business is to become an easy mark for the sheriff. Let the objector, therefore, be cast into outer darkness.

New Ideas Tabooed

When one considers the characteristic attitude of the public mind toward new ideas in education, it need not be thought remarkable that not one of Dr. DeBey's critics, either on the board or on the editorial staff of the city press, gave much evidence of really comprehending the meaning of the plan which she proposed. How could they have given it that consideration necessary to understand it! Within an hour or two after it was presented to the public, these mighty folk, vociferous with objections, had shown to their own satisfaction the emptiness of the whole scheme. If anyone said, "Let me think it over for a day, or even for fifteen minutes, before I am called upon to express an opinion," no record of such plea for delay has appeared in print.

Plan Not Understood

The propositions laid down by Dr. DeBey, of course, only foreshadow a plan in its barest outline: she evidently intended

nothing more. Before they can be wrought out into a definite working program, there are many details, involving matters of great difficulty, that will have to be studied with much patience and consideration. It is not so much the intention here, therefore, to discuss the numerous details which must enter into the completed scheme, as it is to treat of the spirit and purpose which the plan embodies.

The Principle Involved

The principle upon which the proposed plan rests is simple, but fundamental, and in its application to educational organization it is almost new. The meaning is this: Under its operation everyone participating in the educational work of the city, from the superintendent and the members of the Board of Education to the humblest teacher, will have a position of influence and worth measured and limited only by his ability to put brains into his work. The chief difficulty in the way of such a plan is that most people have no conception of public life except that under the administration of a boss. The press and public, generally, regard our common-school system as now administered in this country as being of necessity under the control of a boss, though whether this function resides in the superintendent or board of education is, in most places, still an unsettled question. The idea of the boss being uppermost, people jumped to the conclusion, therefore, that Dr. DeBey's plan means that the teachers shall be the boss, and that the collar now worn by themselves shall be placed about the necks of the superintendent and board. It has not dawned upon the average mind that there yet may be a plan evolved which will eliminate the boss, and under which all will have the opportunity and the privilege of co-operating and contributing to the common good up to the limits of their power to help! *That is the spirit of Dr. DeBey's plan, and that is all there is to it.*

Point of Objection

To be sure, nobody can object to this on theoretical grounds; it is the *practical* point that really rouses all opposition — it seals the doom of bossism in education. It demolishes bossism by the board and superintendent, and it destroys the hope of bossism by the teachers — probably many teachers themselves do not see this, *but that is*

what it means. It substitutes for the system of bossism and fear the idea of co-operation and mutual consideration. An educational program based upon this principle is perfectly feasible, and it should be the business of all thoughtful people, on the board and off, to help work it out.

The Boss and the Employee

In a small village system the evils of bossism are minimized because the intimate relationship of the superintendent and board to the schoolroom work, which under the circumstances is possible, necessarily encourages and admits of more or less co-operation. But in large cities the evils are increased in proportion as the superintendent and board are removed from an acquaintanceship with the common teacher and the children, until the separation has rendered the situation intolerable for the teachers. For with the idea of the boss goes also the idea of the bossed, and the teacher becomes, in the eyes of the superintendent and board, an "employee" in a derogative sense of the word; whereas the teachers are not their "employees" in the sense that business makes use of this term, nor are they their servants or slaves; they are their colaborers, their colleagues, and their equals. In a lone sentence, a Chicago paper did express the truth when it said: "The trouble which Dr. DeBey finds with the school management is that it reaches from the top downward. She would have it come from the bottom upward." In holding to this view, Dr. DeBey falls in with history. No educational reform, nor any other for that matter, ever began at the top, because those at the top are generally satisfied. Friedrich Froebel struck the keynote of progress in education when he said: "Come, let us live with the children." Had he said, "Come, let us get into the board of education," we might have been without the kindergarten even today. Pestalozzi lived with the children as in a home; had he gotten himself elected superintendent, the regeneration of Germany might never have been realized. It is a profoundly significant fact that all educational progress is made through teachers who are actually

at work with pupils. The reason for this is evident, and it brings to the surface once more the essential difference between a teacher and a mere business employee. The employee is in charge of a section, and may know more than the head of the firm about the details of gloves or shoes; his function, however, never requires him to have that breadth of view which to the head of the house is so essential. But the teacher, always in the presence of the children, *is immediately and eternally confronted with the whole educational problem.* In the store the glove department may be abolished without detriment to the department for shoes; but in the school system nothing can be done that does not profoundly affect for good or ill the teacher's work with her children, because it is for them, finally, that the whole organization exists. It is for this reason, therefore, that, in the future, the superintendents and boards of education will learn to exalt themselves by sitting at the feet of the teacher, that they may know what the children actually need. This will bring to them the true dignity that belongs to high service.

Teacher vs. Employee

Dr. DeBey's plans, as laid before the public, should receive the closest study and consideration by all friends of popular education for precisely this reason, that she brings to the board a wide and varied experience as a practical teacher. She forms a distinctly new element in the composition of the board, and is able to give her colleagues a point of view that heretofore they have been rarely able to gain.

The plan under consideration not only provides for everyone adequate opportunities for the development of new ideas, but it also secures to each the right to have his ideas duly considered, and, still further, to have a voice in determining whether they shall be carried into effect. Without the latter provision, of course, all else is vanity of vanities. It is too much to expect intelligent men and women to use their time and energy in thinking out reforms, if they are to be denied forever the privilege and opportunity of realizing them. This is the one point, perhaps, which above

Teachers Need Authority

all others arouses the bitterest opposition. The unspeakable hypocrisy of the public, that all through the years has been loading the teachers with a mawkish sentiment about the divinity of their work and mission, is baldly exposed by their instant opposition when the teachers seek some effective means of putting their divine ideas into practice. What the politicians and bosses are especially anxious for is that the dear teachers shall retain their divinity and —keep quiet!

Bald Hypocricy

It is not intended here to bear down with unnecessary severity upon superintendents and boards of education, nor is the purpose to belittle their great functions in the administration of a school system. Neither does Dr. DeBey's plan contemplate (as the public press assumed it did) reducing superintendents and boards of education to ciphers. On the contrary, it forecasts a higher field of usefulness than either can possibly attain under the present plan. It is frankly proposed that there shall be a general survey of all the functions that belong to a school system, with a view to placing the responsibilities for these functions upon the heads of those who, from the nature of their positions and work in the system, are able to meet them most intelligently. A hue and cry is raised at once because it is assumed that such a plan must diminish the chance for initiative on the part of the superintendent and board. Parenthetically, of course, as against this, the fact that thousands of teachers in the schools of the country are deprived of *all* initiative by the present plan counts for nothing. The truth is, however, that, if under the new plan proposed anyone should fail to find room for initiative, it would be because the individual himself is not blessed with the article. The stimulus toward personal initiative, as a matter of fact, would be immeasurably greater than it is under the present system: greater because, all working together upon common problems, the ideas of each, in order to impress themselves, would have to weigh more than they do now. The consequent uplift to the character of school work would be enormous and general. There would not be a place left in the entire system that a small man could fill.

Board and Superintendent Not Ciphers

The Initiative

A plan of school administration which "begins at the bottom instead of at the top" would develop that stability and steadiness in public-school work which are absolutely necessary to a healthy life and growth. The schools would be no longer so closely subject to the mutations of the board and the superintendent. Board members and superintendents must come and go, no matter whether they are elective or appointive. The teaching force is more stable, and its stability would tend to increase because of improved and more settled conditions. It is common at present to seek to secure this desired stability through a long term for the superintendent, or through his repeated re-election. Experience shows, however, that this plan alone brings a curse to the schools oftener than it carries a blessing. It is all because the man—any man—is too small and the school system is too large. A school system that is not so organized as to be bigger than any man in it is no system at all for the democracy of even a village. With the responsibilities for the schools properly distributed among all those who do the work, it would be possible no longer, for the meteoric superintendent, or the transient teacher, or the noisy fellow that by a political accident gets into the board of education, to shake the system of a great city, as he now may do, to its very foundation. The school system must be so organized that, no matter who is elected to any one position, or who is defeated; no matter who lives or who dies, the interests of the children shall remain free from the perils of those who seek public place in order to attain personal ends.

Greater Stability Insured

A School System vs. an Individual

The composition of a school board should be the strongest possible from a business point of view. In a city like Chicago, for instance, with its annual budget of many millions of dollars, the board should include, as it often does, the finest business talent it is possible for the public to secure. In a board of business men, however, one will not often find those who in the development of their commercial careers have been able to keep pace with the growth of pedagogic knowledge. It is for this reason that the teachers should not only have the privilege, they should be required to contribute from their studies and experience to the professional development of the school system.

The brief term on the board which is ordinarily granted to its members, renders it impossible for any business man, no matter how well disposed he may be, to acquaint himself thoroughly with the pedagogic aspect of the school system. No purely business enterprise could grow, or long endure, if it were made subject to the management of so changeable a directorate as that now having entire control of the public schools. It is as though some great business house on State Street were to select groups of teachers from the schoolrooms and place them for brief successive periods in entire charge of its commercial interests. In a word, those who perform certain functions in the school system must be permitted, nay required, to assume corresponding responsibilities; and, conversely, no one must be allowed to assume responsibilities for functions which he does not and cannot perform. Such an organization, through the gradual harmonizing of its teaching, its supervising, and its legislative functions, would develop a unity, a dignity, and an impregnable moral strength that our public-school system hitherto has never known.

Dr. DeBey's plan as yet is not understood, but, in the end, the principle underlying it will win. The time when it can go into operation depends very much upon the teachers themselves. The scheme does not propose benefits for the teachers alone, nor is it the purpose simply to make trouble for the board and superintendent. Neither teachers, nor school boards, nor superintendents have a monopoly of wisdom. They are all subject to the same racial, social, political, and religious prejudices that already have done so much to impair the usefulness of the public schools. Inflamed as many teachers are by present conditions it is not easy for them to see equally well all sides of the questions involved. If their movements are not controlled by a steady sense of justice, by deliberation, fairness, and consideration for all, and, finally, if they do not ever have an eye single to the welfare of the children, their efforts at reform will deservedly fail.

W. S. J.